

## Abstract

Banana (*Musa* spp.) is one of the most important food and cash crops in various parts of Kenya. Despite its importance, banana production faces major challenges including scarcity of high quality seedlings, and pests and diseases. Demand for pest-free, high quality planting materials has been on the increase. The study aimed at determining if a macropropagation technique can produce healthy banana seedlings. Naturally regenerated suckers that are preferred by farmers are more likely to carry pests and diseases, leading to reduced productivity and a short lifetime of new plantations. Tissue culture has been introduced, but its adoption has been low due to the high costs and skills involved. To address this constraint, macropropagation has been introduced as an alternative propagation technology. The technology can be implemented with little capital or skill. A survey was conducted to identify the important diseases and pests of bananas in eastern and central Kenya. Macropropagation nurseries were constructed at Kenyatta University and in farmers' fields representing different agro-ecological zones. Corms obtained in accordance with established quality assurance protocols were propagated in two cycles and the health of seedlings monitored. Pathogenicity tests were carried out to determine the importance of microorganisms isolated from the corms. Fusarium wilt and Sigatoka were recorded as the most important diseases with 66 and 50% incidence respectively, while nematodes and banana weevil were important pests, occurring at 21 and 17% incidence respectively. Endophytes were commonly isolated from the corms. Weevil infestation was found to be the major cause of rejection of farms for acquiring corms. An average of 98% and 100% healthy seedlings resulted from the first and second cycles of macropropagation. Production of healthy, low cost bananas from this project will benefit seed entrepreneurs and farmers.